CLAIMS

What is claimed is:

1. A cordless communication system capable of providing voice and data service, comprising:

a first device; and

a second device capable of wireless communication with said first device via an air interface;

wherein the air interface employs a frame structure suitable for communication of asynchronous information using a HomeRF SWAP protocol and isochronous information using a WDCT protocol.

2. The cordless communication system of claim 1, wherein the frame structure includes at least one WDCT time slot suitable for communicating the isochronous information if voice service is requested.

3. The cordless communication system of claim 2, wherein the air interface utilizes a WDCT carrier frequency, bandwidth and bit duration while the at least one WDCT time slot is transmitted.

4. The cordless communication system of claim 2, wherein the at least one WDCT time slot comprises a WDCT transmit slot and a WDCT receive slot, the WDCT receive slot directly following the WDCT transmit slot in the frame structure.

5. The cordless communication system of claim 2, wherein the at least one WDCT time slot comprises a WDCT transmit slot and a WDCT receive slot, the WDCT transmit slot being followed by the WDCT receive slot after approximately 5 ms.

6. The cordless communication system of claim 1, wherein the frame structure includes a WDCT control channel suitable for controlling devices of the cordless

communication using voice service when no voice service is requested.

7. The cordless communication system of claim 6, wherein the air interface utilizes a WDCT carrier frequency, bandwidth and bit duration while the WDCT carrier channel is transmitted.

8. The cordless communication system of claim 1, wherein, if no isochronous information is to be transmitted within the frame structure, the frame structure is formatted to include in order a hop command, a beacon, a SWAP period suitable for transmission of asynchronous information, and a WDCT control channel suitable for controlling devices of the cordless communication system using voice service.

9. The cordless communication system of claim 1, wherein, if isochronous information is to be transmitted within the frame structure, the frame structure is formatted to include in order a hop command, a first WDCT transmit slot, a beacon, a first SWAP period, a first WDCT receive slot, a second SWAP period, a second WDCT transmit slot, a third SWAP period, a second WDCT receive slot, and a fourth SWAP period, the SWAP periods being suitable for transmission of asynchronous information using a CSMA/CA access mechanism according to the HomeRF SWAP protocol and the WDCT transmit and receive slots being suitable for transmission of isochronous information using a TDMA access mechanism according to the WDCT protocol.

10. The cordless communication system of claim 9, wherein the first WDCT transmit slot precedes the first WDCT receive slot by approximately 5 ms, the second WDCT transmit slot precedes the second WDCT receive slot by approximately 5 ms, and the first WDCT transmit slot precedes the second WDCT transmit slot by approximately 10 ms.

11. The cordless communication system of claim 1, wherein, if isochronous information is to be transmitted within the frame structure, the frame structure is formatted to include in order a hop command, a first WDCT transmit slot, a first WDCT receive slot,

a beacon, a first SWAP period, a second WDCT transmit slot, a second WDCT receive slot, and a second SWAP period, the SWAP periods being suitable for transmission of asynchronous information using a CSMA/CA access mechanism according to the HomeRF SWAP protocol and the WDCT transmit and receive slots being suitable for transmission of isochronous information using a TDMA access mechanism according to the WDCT protocol.

12. A cordless communication system capable of providing voice and data service, comprising:

a first device; and

a second device capable of wireless communication with said first device via an air interface employing a frame structure suitable for transmission of asynchronous information utilizing a HomeRF SWAP protocol;

wherein, if voice service is provided between said first device and said second device, the frame structure further includes at least one time slot suitable for communicating isochronous information utilizing a WDCT protocol; and

wherein, if voice service is not provided between said first device and said second device, the frame structure further includes a WDCT control channel suitable for controlling devices of the cordless communication system requiring voice service.

13. The cordless communication system of claim 12, wherein the WDCT control channel is disposed at the end of the frame structure.

14. The cordless communication system of claim 12, wherein the air interface utilizes a WDCT carrier frequency, bandwidth and bit duration while the at least one WDCT time slot and the WDCT control channel are transmitted.

15. The cordless communication system of claim 12, wherein the at least one WDCT time slot comprises a WDCT transmit slot and a WDCT receive slot, the WDCT receive slot directly following the WDCT transmit slot in the frame structure.

16. The cordless communication system of claim 12, wherein the at least one WDCT time slot comprises a WDCT transmit slot and a WDCT receive slot, the WDCT transmit slot being followed by the WDCT receive slot after approximately 5 ms.

17. A method of providing voice and data service for communication of information in a cordless communication system, comprising:

determining if voice service is required; and

communicating at least one frame of the information being communicated, the at least one frame having a frame structure suitable for transmission of asynchronous information using a HomeRF SWAP protocol and isochronous information using a WDCT protocol;

wherein, if no voice service is required, the frame structure includes a WDCT control channel suitable for controlling devices of the cordless communication system requiring voice service; and

wherein, if voice service is required, the frame structure includes at least one WDCT time slot suitable for communicating isochronous information.

18. The method as claimed in claim 17, further comprising altering the carrier frequency of the air interface from a SWAP carrier frequency to a WDCT carrier frequency when at least one of a WDCT control channel and a WDCT time slot are transmitted.

19. The method as claimed in claim 17, further comprising altering the bandwidth of the air interface from a SWAP bandwidth to a WDCT bandwidth when at least one of a WDCT control channel and a WDCT time slot are transmitted.

20. The method as claimed in claim 17, further comprising altering the bit rate of the air interface from a SWAP bit rate to a WDCT bit rate when at least one of a WDCT control channel and a WDCT time slot are transmitted.

21. The method as claimed in claim 17, wherein transmitting at least one frame suitable for containing data information further comprises transmitting the WDCT control channel at the end of each frame.

22. The method as claimed in claim 21, wherein transmitting the WDCT dummy bearer at the end of the SWAP frame structure comprises transmitting the WDCT

control channel approximately every 20 ms.

23. The method as claimed in claim 17, wherein the at least one WDCT time slot comprises a WDCT transmit slot and a WDCT receive slot, the WDCT receive slot directly following the WDCT transmit slot in the frame structure.

24. The method as claimed in claim 17, wherein the at least one WDCT time slot comprises a WDCT transmit slot and a WDCT receive slot, the WDCT transmit slot being followed by the WDCT receive slot after approximately 5 ms.